

## Combining Epidemiologic Information Across Space Agencies

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Space flight is a very unique occupational exposure with potential hazards that are not fully understood. A limited number of individuals have experienced the exposures incurred during space flight, and epidemiologic research would benefit from shared information across space agencies. However, data sharing can be problematic due to agency protection policies for personally identifiable information as well as medical records. Compliance with these protocols in the astronaut population is particularly difficult given the small, high-profile population under study. Creativity in combining data is necessary in order to overcome these difficulties and improve statistical power in research. This study presents methods in meta-analysis that may be used to combine non-attributable data across space agencies so that meaningful conclusions may be drawn about study interests. Methods for combining epidemiologic data across space agencies are presented, and the processes are demonstrated using life-time mortality data in U.S. astronauts and Russian cosmonauts. This proof of concept was found to be an acceptable way of sharing data across agencies, and will be used in the future as more relevant research interests are identified.